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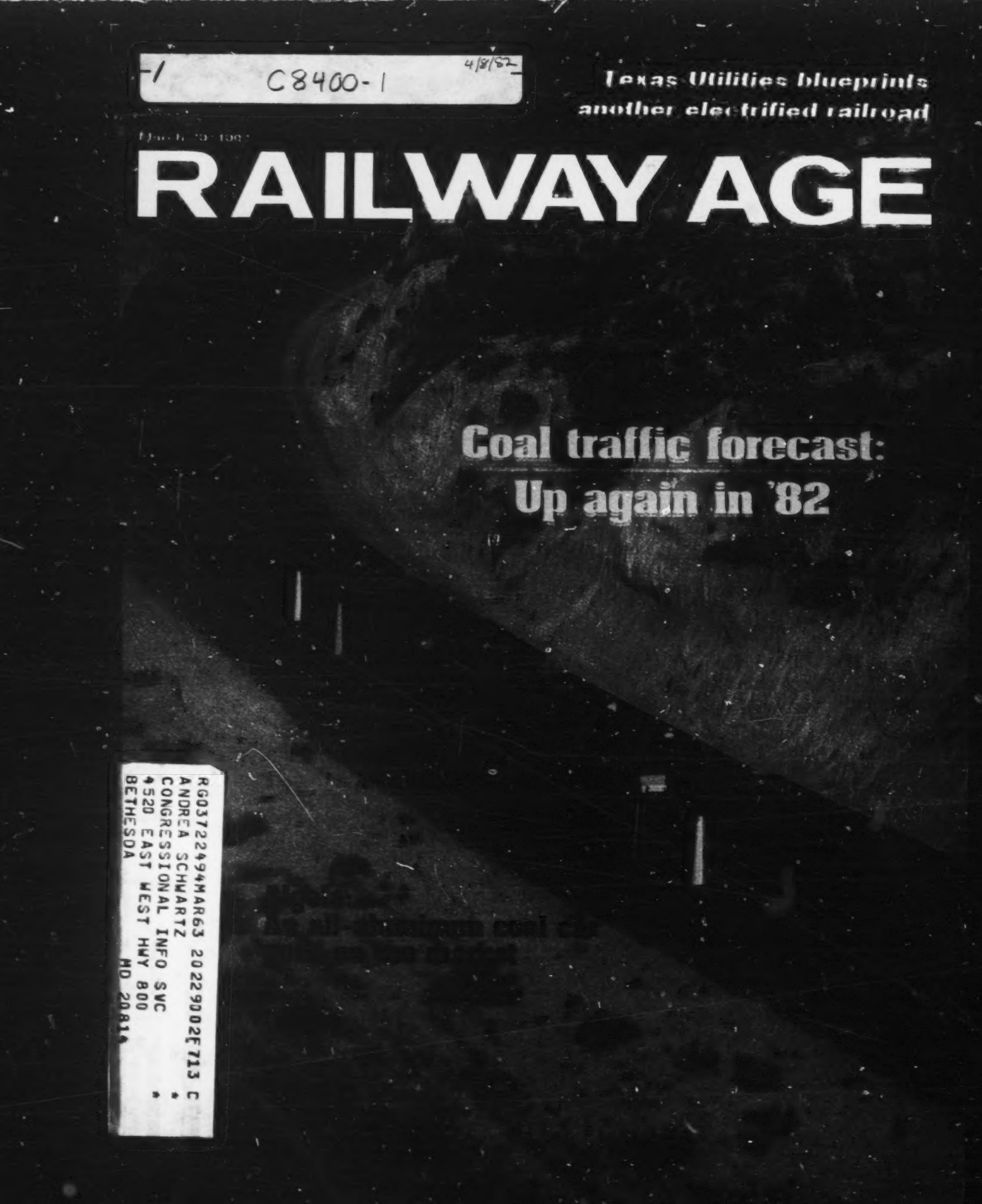
Texas Utilities blueprints another electrified railroad

March 29, 1982

RAILWAY AGE

Coal traffic forecast: Up again in '82



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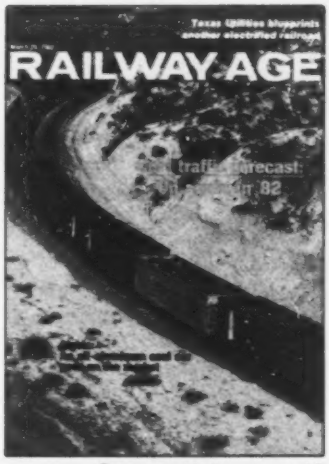
FEATURES



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Despite the recession, coal just keeps rolling along. Forecasts call for increased haulage of domestic coal this year with export traffic holding steady.

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COVER: The Algola aluminum gondola in test operation in Santa Fe's York Canyon unit coal train; photo by Don Erb, system photographer, Santa Fe, Los Angeles.

By its estimate, demand may grow from 33 million tons in 1985 to a possible 170 million tons by 1995, with Japan accounting for about 60% of the potential 1995 market.

But Burlington Northern is being cautious in assessing what this market will actually mean to BN even if it develops as projected. Physical and chemical characteristics of Powder River Basin coal, Hertog concedes, make it "less attractive" for use in the Far East than higher-quality coals. Stiff competition, he says, will come from coal mined in other western states (including Alaska) as well as from coal produced in Australia, Canada and South Africa. Thus, BN sees a "possible export market developing around 1985 to 1990, with gradual growth once the market begins to accept Powder River Basin coal."

● **UP gears for growth.** Last year was also a year of coal-traffic growth for Union Pacific, with exports to Pacific Rim countries particularly strong. Total coal tonnage went up from 28 million tons to 32.6 million, with export movements rising from 1.2 million tons in 1980 to 4.9 million in '81.

With the coal-export port-facility expansions in progress and planned for Long Beach and Los Angeles, UP is optimistic about its future role—noting also a recent study by the Western Coal Export Task Force which indicates that Japan, South Korea and Taiwan will be importing between 100 million and 116 million tons of steam coal by 1990, with about 25% of that coal expected to come from the U.S.

UP's main route for coal exports is its line between Salt Lake City and the southern California ports, a line which has seen total traffic grow from 10 trains a day to 25 in just the past five years.

To handle the load, present and future, UP has been moving with a plant-expansion program that includes an $8-million line-straightening project in Utah, bridge improvements, construction of new sidings or siding extensions at 16 locations along the route in three states, and construction of a new classification yard at Yermo, Calif.

Union Pacific Corp., for its part, is participating in the engineering and environmental programs which are expected to result in an expansion of the coal-throughput capability at Long Beach, an expansion which could add about 15 million tons of shipping capability by the mid-1980s.

And UP Railroad is also involved in what shapes up as probably the most controversial inter-railroad dispute on coal, the one that involves UP, Chicago & North Western, BN and access to Powder River Basin coal. Last December, UP Corp. and C&NW got commitments to finance a project designed to get C&NW into the coal country; with that entry, North Western would originate coal shipments and then deliver them to UP over a new connector line in Nebraska. UP sees the project as becoming operational by 1984. It sees the C&NW/UP link as increasing UP coal traffic by 25 million tons a year within five years of completion of the project.

But, Burlington Northern, noting that C&NW was not able to come up with the money to meet terms of an earlier agreement covering construction of a line to serve Powder River Basin mines, is fighting back now—and the outcome of this inter-railroad battle remains in doubt.

Rio Grande, meanwhile, sees its coal traffic going up by close to 100% by the end of the 1980s. It's already originating coal for export to Japan and South Korea for use by utilities, steel and cement plants. And, as Assistant Vice President-Fuel Traffic H. E. Cash puts it, Rio Grande "is fortunate in that it serves the heart of the coal country in Colorado and Utah, which contains some of the highest-quality coal in the West."

● **A new image for Illinois coal.** Lower-quality coals, however, need not be ruled out of the export market, as Illinois Central Gulf proved last year with movement of a substantial volume of Illinois Basin coal for export to Spain for use by the cement industry. Illinois Basin coal has long been maligned for its high-sulphur, high-volatility properties, but ICG helped to create an overseas market for it, and ICG is continuing to investigate market potential in such countries as Portugal, Italy, Greece and France. Moreover, once a new coal terminal is completed upriver from New Orleans, there will be a capability for blending Illinois Basin coal with higher-quality coal (probably from Appalachia), and this should work to expand the market for Illinois coal among European electric utilities.

Unfortunately, however, there are no easy ways to forecast export demand. And as Dr. David L. Anderson, vice president-transportation services for Data Resources, Inc., told the PLM conference, "to many U.S. coal producers and transportation carriers, export coal distribution remains a subject fraught with unresolved mysteries and misunderstandings. At times, myths tend to cloud the important underlying factors that will actually determine overseas coal markets in the 1980s as well as possible U.S. participation. Simplistic approaches may produce misleading results, as witnessed by the current over-building of U.S. coal export facilities"—an observation validated a few days later with the announcement that work was being suspended on an East Coast coal-export facility already under construction.

Data Resources' overall estimates are positive. For example, it sees Europe importing more than 110 million metric tons of steam coal by 1990, a 100% increase over 1979 levels. It sees Far East demand climbing to 67 million tons by 1990, a net increase of 54 million tons over 1979 levels. Worldwide, it sees steam-coal trade going from about 70 million tons in '79 to 214 million tons by '90, for a compound annual growth rate of 9.4%.

● **Contradictory signals.** From these forecasts, it would appear that the U.S. is in good position to benefit, since it has better than 30% of the world's recoverable coal reserves. But appearances could be deceiving. As DRI's Dr. Anderson puts it, "the basic problem facing coal-transportation planners is that although distribution systems are often blamed for inhibiting movements—as well as reducing the competitiveness of a country in world coal trade—many other underlying forces are also responsible. Planners seeking to determine optimal coal-transfer-facility capacity, rail investments, oceangoing vessel or port needs must monitor and evaluate a number of disparate and often contradictory coal market signals. In general, analysts have to keep track of changes in world economics, energy, competitive suppliers, political risks, buyer/seller behavior and transportation infrastructure in order to predict coal-transportation needs in the 1980s."

In looking at world coal needs and coal available for export, DRI comes to the conclusion that "coal production available for export exceeds realistic import demands in 1990 by more than 50%." And the U.S., even with its vast reserves, may not dominate world coal trade during the '80s "because American coal is generally more expensive than other export coal, based upon landed price comparisons in both Europe and the Far East."

Even if U.S. coal prices increase at a slower rate than the prices of other exporters, Dr. Anderson says, in 1990 there will still be a significant differential: "As a result, the U.S. will remain the price-setter and perhaps the supplier-of-last-resort—due to its large exporting capacity and benevolent attitude toward wayward trading partners—to world coal markets in the next decade."

● **Public vs private funding.** Taking Pacific rim exports as an example, Dr. Anderson makes these observations with respect to transportation:

"With transportation costs making up more than 70% of total landed coal prices in Pacific Rim countries, the importance of better technology and increased efficiency in rail and oceangoing-vessel movements of coal cannot be overstated. In evaluating the relative competitive-

Norfolk & Western moved 33.6 million tons of coal to its Norfolk, Va., piers in 1981—close to a record—and the trend continues, with a new monthly record set in February.

ness of various coal exporters in the 1980s, planners must consider whether the country has the capability to implement innovations that will reduce costs and increase market penetration.

"An important consideration is whether public or private funds are necessary to make distribution-system improvements. In Canada, for example, the government must commit to spending billions of dollars in the 1980s to upgrade railroad capabilities to export grain and coal. The political decision process is substantially more complex than a private one, and debates on which lines to upgrade and which new terminal/equipment investments to make will go on for years, perhaps inhibiting Canada's ability to be a major coal exporter until the 1990s.

"The introduction of new technologies in transportation, such as a higher-capacity coal railcar or a shallow-draft supercollier, will also have significant impacts on distribution costs. Larger coal cars could reduce per-ton costs by up to 10%, while the higher-capacity oceangoing superbulkers can cut 25% from vessel charges. The nations that introduce effective new coal-distribution technologies will be the most competitive exporters of the 1980s. Since the great majority of the landed price is transportation-related, exporters will get more payback from cost-reducing transportation innovations than from most other coal-related investments in the 1980s."

Finally, he says, "operational improvements, whether in railcar loading, line-haul movements, port unloading or ship-loading, are also crucial in improving competitiveness of U.S. export coal in the 1980s. With U.S. railroads investing heavily in right-of-way and terminal facilities in the early 1980s, the potentials for increased train-operating efficiencies are present. The major question is whether these savings get passed back to the shipper and can then be reflected in lower landed prices for U.S. export coal."

● **Pricing the service.** Transportation costs and savings? That's a question that has no answer yet, for export or domestic coal movements.

Railroads, for example, want complete deregulation on export coal hauling. Producers are extremely nervous, fearing that dereg would lead to rate increases that, in turn, would lead to a deterioration of the U.S. coal industry's position in the export markets.

For both domestic and export moves, though, railroads have a case to make—and their case also applies to coal producers and users. As Rio Grande's Cash points out, there is a common problem "in an inflated economy that is not understood by the general public nor in the political and regulatory arenas. Locomotives, cars, cabooses, signal systems, coal-hauling machinery, wash plants, mining machinery, power plants, coal-burning boilers and so forth are not off-the-shelf items, and the inflation rate over the past few years on these customized items has been closer to 20% annually than to the 12% experienced by the average consumer."

As for the in-place domestic rail deregulation, Cash doesn't see it as having a major effect on coal movements, other than in its contract-rate applications. But, as he notes, "the same basics have to be agreed-to in a contract rate as in a tariff rate, so contract rates are not a cure-all for all problems. Hopefully, the Interstate Commerce Commission will, sometime in the near future, adopt a set of guidelines that we can become accustomed to—before they come up with a new method. All of the changes they have adopted in the past few years have caused confusion for all of us except the lawyers, who beat a path to the bank, confused or not."

● **Captive customers?** Still, good argument or not, railroads are facing a continuing problem on the price front. Carl E. Bagge, president of the National Coal Association--and, ironically, a former railroad lawyer—says that an issue of growing concern is "a serious lack of competition" in the movement of coal. Railroads, Bagge says, "clearly have a monopoly position in the transportation of most coal. The railroads move about two-thirds of all the coal mined, and 85% of what they carry has no alternative means of transport."

The Staggers Act, Bagge contends, was supposed to provide "a measure of protection for shippers where they have no practical alternative and are subject to potential monopoly abuse. Unfortunately, subsequent action taken by the ICC has emasculated that protection, and other actions being considered by the Commission could further reduce regulation protecting consumers from unreasonable transportation costs."

U.S. coal producers and consumers, NCA's president says, "have become very uneasy during the past year as the regulatory balance has shifted to favor the railroads. The intention of railroad deregulation was to allow greater flexibility for the railroads and to still provide some measure of protection for captive shippers, while allowing market forces to determine transportation services where possible. However, such forces can only be relied upon if a marketplace exists. Without a marketplace or regulation in its place, the consumers of coal—notably the consumers of electricity—will be faced with unrestrained pricing by the railroads."

And while the debate goes on, Energy Transportation Systems, Inc., goes on talking about a ground-breaking for 1,400 miles of coal-slurry pipeline in 1983, a line that would stretch from the Powder River Basin of Wyoming into the South. Important issues are still to be resolved, among them financing and acquisition of all the rights-of-way that will be needed. But ETSI looks confident—even without federal eminent-domain rights. And so another factor could be introduced into what is already a complex coal-transportation situation. ■

REVENUES AND EXPENSES OF RAILWAYS

Fourth quarter figures of calendar year 1981

(Dollar figures are stated in thousands: i.e., with last three digits omitted)

		Operating revenues				Operating expenses								Operating ratio		Income after fixed charges		1981 Net Ry. operating income	Net income	
						Way & structures			Equipment											
		Freight	Other	Total 1981	Total 1980	Total 1981	Total 1980	1981 Deprec.	Total 1981	Total 1980	1981 Deprec.	Total 1981	Total 1980	1981	1980	1981	1980		1981	1980
Amtrak	3 mos.	–	107,504	107,504	295,427	23,983	24,046	3,600	77,739	84,650	15,422	295,454	299,995	274.83	101.54	(206,657)	(20,007)	(187,948)	(206,657)	(20,007)
	12 mos.	–	1,037,873	1,037,873*	1,105,413*	91,415	88,329	8,664	344,450	347,225	69,803	1,267,275	1,175,712	122.10	106.35	(299,947)	(108,528)	(229,396)	(299,947)	(108,528)
Atchison, Topeka & Santa Fe	3 mos.	552,197	13,189	565,386	592,415	89,213	80,785	2,217	147,601	116,998	23,560	549,938	499,100	97.26	84.24	11,070	95,607	30,976	26,350	70,966
	12 mos.	2,318,056	52,719	2,370,775	2,204,483	392,936	351,776	13,486	533,428	462,587	87,407	2,219,928	1,976,601	93.63	89.66	125,474	214,384	136,937	110,567	162,930
Baltimore & Ohio	3 mos.	269,601	12,177	281,778	254,650	45,205	40,826	1,816	72,305	52,642	8,248	259,596	228,365	91.12	89.67	50,055	21,068	8,341	35,628	14,972
	12 mos.	1,019,297	39,979	1,059,276	945,951	207,268	179,733	7,099	252,058	206,420	30,791	1,000,847	886,973	94.48	93.76	100,613	42,933	32,791	72,656	35,451
Bessemer & Lake Erie	3 mos.	29,462	1,650	31,112	26,590	4,547	2,642	736	2,751	2,304	1,193	22,685	17,468	72.91	65.69	10,677	10,267	2,235	4,480	6,444
	12 mos.	110,783	7,058	117,843	109,871	16,207	13,830	2,785	10,007	14,788	5,089	83,026	74,622	70.45	67.91	42,783	38,805	15,494	23,451	21,435
Boston & Maine	3 mos.	28,945	1,416	30,361	29,330	5,597	4,849	285	7,217	6,715	363	30,106	26,182	99.16	89.26	2,795	4,415	(52)	4,945	937
	12 mos.	116,030	5,888	121,918	115,036	24,898	21,156	1,128	30,838	28,707	1,442	123,160	111,404	101.02	96.84	4,668	6,543	–	6,235	(4,790)
Burlington Northern	3 mos.	908,466	27,785	936,251	831,897	170,435	161,089	5,867	186,728	178,337	18,348	850,720	757,125	90.86	91.01	131,219	89,739	31,517	77,174	64,804
	12 mos.	3,649,237	95,144	3,744,381	2,982,702	706,086	580,046	22,635	770,197	637,573	73,137	3,444,015	2,745,644	91.97	92.05	400,793	287,009	167,559	287,868	222,715
Chesapeake & Ohio	3 mos.	297,733	15,133	312,866	255,723	45,305	33,470	1,935	59,470	51,762	5,092	247,582	216,675	79.13	84.73	124,730	74,577	30,070	89,464	55,642
	12 mos.	1,008,287	48,187	1,057,152	949,007	191,066	157,209	7,590	222,038	193,094	15,971	936,913	828,816	88.62	87.33	235,621	178,898	60,414	175,809	131,528
Chicago & North Western	3 mos.	202,829	24,463	227,292	260,339	47,192	52,638	1,282	50,603	65,623	4,228	226,596	253,309	99.69	97.29	9,591	5,691	1,306	11,138	5,647
	12 mos.	883,055	101,113	983,168	935,736	214,729	193,708	4,762	224,716	237,691	17,362	968,426	922,174	98.50	98.55	8,701	(2,276)	19,584	19,321	(2,431)
Chicago, Milwaukee, St. Paul & Pac.	3 mos.	81,848	12,309	94,157	105,574	34,713	22,660	901	25,768	28,689	4,145	121,365	114,880	128.89	108.81	(21,964)	(628)	(104,877)	12,323	(34,566)
	12 mos.	352,410	51,949	404,359	380,957	103,269	91,379	3,964	119,811	134,191	16,203	477,862	488,995	118.17	125.39	165,095	(78,405)	(152,193)	193,210**	(205,580)
Clinchfield	3 mos.	26,194	263	26,457	23,695	4,806	4,228	114	3,436	3,823	987	21,686	18,530	81.96	78.20	7	3,493	4,412	–	–
	12 mos.	103,252	1,019	104,271	89,866	18,787	15,413	448	14,916	13,665	3,936	79,852	65,856	76.58	73.28	18	12,218	25,639	–	–
Colorado & Southern	3 mos.	42,684	794	43,478	32,790	11,762	5,484	74	7,032	7,248	700	42,329	29,312	97.35	89.39	2,412	5,243	491	1,754	5,692
	12 mos.	156,616	2,480	159,096	126,176	35,377	28,083	276	34,459	28,748	2,816	152,702	121,457	95.98	96.26	25,866	19,039	4,390	23,862	21,161
Conrail	3 mos.	792,801	161,580	954,381	994,417	184,845	186,728	7,115	263,921	274,582	36,709	967,070	1,024,809	101.33	103.06	(14,153)	(45,030)	12,734	(4,436)	(45,383)
	12 mos.	3,338,552	672,570	4,001,122	3,792,936	759,473	769,613	25,074	1,052,500	1,070,015	142,950	4,087,510	4,144,126	102.16	109.26	(118,694)	(407,739)	83,963	(106,616)	(405,781)
Delaware & Hudson	3 mos.	28,320	2,202	30,522	26,512	7,242	6,542	161	8,431	6,721	877	31,802	28,848	104.19	108.81	(3,405)	4,003	(1,179)	(3,405)	(4,003)
	12 mos.	114,294	5,887	120,181	113,174	23,805	22,448	601	33,616	31,914	3,410	127,499	118,705	106.08	104.88	(14,870)	(9,226)	(6,907)	(14,870)	(9,226)
Denver & Rio Grande Western	3 mos.	82,910	1,494	84,404	79,063	13,802	12,235	579	13,218	11,462	2,657	69,836	63,461	82.74	80.26	14,911	14,177	10,447	10,769	10,758
	12 mos.	329,138	5,953	335,091	287,474	59,562	47,467	2,431	51,726	43,772	12,460	286,231	241,157	85.41	83.88	48,588	40,938	30,647	30,295	27,507
Detroit, Toledo & Ironton	3 mos.	18,857	1,733	20,590	20,508	4,261	3,538	71	6,443	3,407	773	21,891	18,302	106.31	89.24	(823)	160	(1,297)	(823)	1,159
	12 mos.	82,374	4,074	86,448	74,164	17,063	12,729	499	24,546	21,797	3,804	86,906	76,586	100.52	103.26	(2,407)	(4,829)	(513)	(2,407)	(3,612)
Duluth, Missabe & Iron Range	3 mos.	18,761	319	19,080	20,081	9,440	5,039	874	2,463	3,249	718	23,624	18,421	123.81	91.73	(2,889)	2,668	(3,519)	(1,391)	1,266
	12 mos.	106,228	2,662	108,890	22,819	31,177	24,302	3,491	12,141	9,627	2,650	90,210	73,732	82.84	79.43	23,191	22,704	6,903	12,935	11,793
Elgin, Joliet & Eastern	3 mos.	14,242	9,125	23,367	27,486	3,305	2,823	195	3,311	2,455	1,880	21,679	20,995	92.77	76.43	3,074	7,650	815	2,201	6,267
	12 mos.	65,600	44,382	109,982	109,931	14,367	13,536	776	15,124	14,083	7,363	94,774	93,795	86.17	85.32	21,027	23,579	5,698	11,517	15,061
Florida East Coast	3 mos.	25,239	447	25,686	28,426	9,114	7,012	237	4,793	5,228	1,206	25,499	25,606	99.3	90.0	1,419	7,952	988	2,220	4,822
	12 mos.	100,484	2,175	102,659	97,542	29,485	21,207	944	16,633	17,171	4,800	93,070	78,357	90.7	80.3	15,761	30,137	5,642	11,810	19,222
Ft. Worth & Denver	3 mos.	43,528	876	44,404	34,715	12,478	8,233	89	11,325	6,862	138	45,900	31,395	103.36	90.43	(995)	3,331	38	539	1,528
	12 mos.	173,461	3,685	177,146	137,035	34,612*	24,469	346	38,295	32,211	547	151,478	117,625	85.51	85.83	26,853	19,728	16,353	17,538	12,314
Grand Trunk Western	3 mos.	62,637	1,977	64,614	53,434	8,941	7,088	397	13,304	9,968	746	62,126	50,591	96.14	94.67	4,979	2,183	3,158	5,639	3,505
	12 mos.	224,656	10,009	234,665	194,662	32,892	28,985	1,554	48,514	42,266	4,458	230,219	198,946	98.10	102.19	4,137	(5,213)	7,167	6,837	(966)

Up and coming in export coal haulage is Illinois Central Gulf, which last year moved a substantial volume of Illinois Basin coal for shipment to

Coal traffic:

It just keeps rolling along

Last year was good, and this year promises to be even better, say the experts. But the long-term outlook is clouded by some troubling questions for which there are no easy answers.

By GUS WELTY,
Senior Editor

Coal. Last year, U.S. railroads hauled it in near-record volume, despite a lengthy strike by the United Mine Workers. Last year, railroads moved more than 5,763,000 carloads of it, almost 57,000 more loads than they handled in non-strike 1980. Last year, coal carloadings were at their highest level since 1957, and much of that coal moved in unit trains made up of 100-ton-or-better cars.

What about 1982? For '82, look for continued growth. Look for the pace of coal movements to be less frenetic, since this year there will be no need for pre-strike stockpiling or post-strike replenishing of stockpiles. Look for stored equipment to come out of storage and back into service. Look for continued innovation in equipment, as railroads, producers, receivers and carbuilders continue to try to boost per-car capacities.

How much growth can major coal-hauling railroads expect? That's a good question. But it's worth noting that in 1981, rail carloadings were up by 1% in a year when total coal production fell by 2.3% because of the 72-day UMW strike. It's worth noting that for 1982, the National Coal Association is forecasting about a 10% increase in production, from 802 million tons last year to 880 million tons this year. How much of that coal might be expected to move by rail? About two-thirds of it.

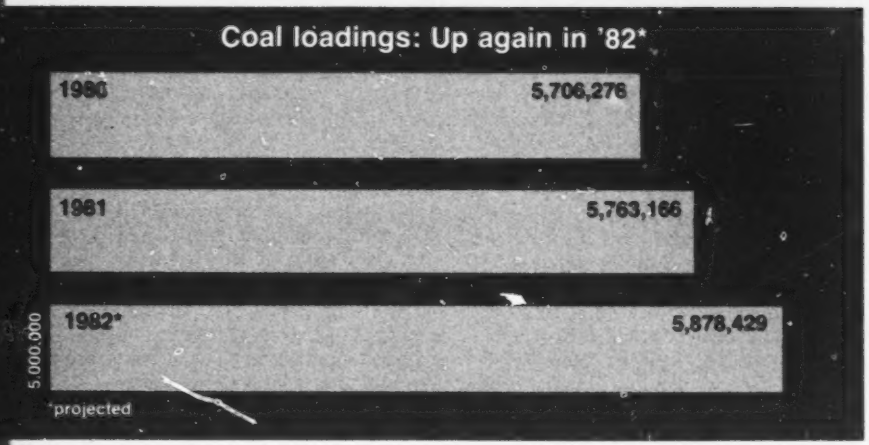
● **Demand—at home and abroad.** Forecasting demand for coal can be tricky, however, for both the export and the domestic market.

Currently both Chessie System and Norfolk & Western are optimistic that export demand will continue strong. Last year, Chessie and Family Lines handled 36.5 million tons of coal for export, with Chessie alone dumping 28.4 million tons at its Curtis Bay (Baltimore) and Newport News coal piers, and this year the ground-storage capacity at Baltimore will be increased, leading Chessie to believe that overseas shipments could run higher in '82. Norfolk & Western, meanwhile, put more than 33.6 million tons over its Lamberts Point (Norfolk) piers last year, and that total missed being an all-time record high by less than a million tons. Already this year, in 28-day February, NW set a record for a single month's export dumping, with more than 3.9 million tons going over the piers.

Obviously, Chessie and NW see the signs as looking good. At the same time, there are those who are less optimistic, figuring that overseas demand for metallurgical coal will continue at good levels but questioning whether the surge in demand for steam coal will maintain itself.

On the domestic side, the market for coal is growing more slowly that it has been. The economic downturn has brought a drop in industrial production. Energy-conservation programs have cut into the growth of demand for electric power. Milder-than-normal winters for the past couple of years have had an impact on demand for power (though 1982 has seen that "trend" reversed in many

Spain. ICG is scouring Europe for other markets.



parts of the country).

With growth in demand down, some utilities are taking a second look at expansion plans and postponing construction of new generating stations. Too, utility and industrial plant conversions to coal have been taking place more slowly than some forecasts had indicated they would. One problem here is that environmental exemptions may be needed before a conversion can be made, and this can slow the process. But another question has to do with the size of the market that might be created through conversion, and it may not be all that big: By an NCA estimate, if all the now-planned conversions were actually carried out, it would increase domestic coal consumption by only about 20 million tons annually after 10 years.

● **BN: Unused capacity.** Burlington Northern is one road that is very much aware of what's happening on the domestic front.

In 1981, BN originated 112 million tons of coal, setting a new volume record for the 11th year in a row. Currently, BN is shipping coal to 42 electric utilities, to 53 destinations, on its own and in conjunction with other railroads and with several water carriers. It's hauling coal from 19 mines in the Powder River Basin alone.

But, BN has found its own transportation capabilities outstripping the increase in demand. As Senior Vice President-Coal and Taconite John H. Hertog told the annual PLM coal conference earlier this month, BN could have moved several million more tons of coal out of the Basin if the demand had been there. For most of '81, BN had about 4,000 coal cars stored, and several thousand shipper-owned cars were also idle.

For '82, BN does see some growth. Including shipments to six generating stations that started up in '81 and to four new or expanded plants scheduled to be operating this year, BN figures that it will show an originated-tonnage increase of about eight million tons.

Long-range, BN is looking for "steady growth" in coal demand, despite the recent blips in the growth curve. BN looks for most of the growth to come from western mines.

The National Coal Association's prediction is that mines east of the Mississippi River will produce 590 million tons this year, with western mines adding 290 million tons. Western mines produced 275 million tons last year, and BN's John Hertog cites Department of Energy forecasts indicating that western production will climb to 382 million tons in 1985 and to 840 million tons in 1995, for an average annual increase of about 6%, while eastern production over the same period is expected to rise by only about 3.5% annually.

Hertog also notes that a National Electric Reliability Council study indicates that electric-energy requirements for the territory served by BN will go up at a compounded annual rate of 4% between now and 1986, a growth rate higher than that projected for the nation as a whole.

BN has also begun to look seriously at the export market, especially the market for steam coal in such Pacific Rim countries as Japan, Taiwan and South Korea.

Illinois Central Gulf	3 mos.	236,743	21,149	257,892	259,317	47,708	45,578	1,958	73,529	71,772	7,001	261,620	252,733	101.44	97.46	21,837	2,411	(5,233)	19,818	2,402
	12 mos.	951,195	81,572	1,032,767	973,266	205,380	185,990	7,036	285,359	269,295	28,966	1,051,206	983,099	101.78	101.01	(5,931)	(20,179)	(16,370)	(5,921)	(27,227)
Kansas City Southern	3 mos.	74,292	3,713	78,005	73,661	15,532	15,209	761	19,676	16,154	5,207	71,772	66,964	92.00	90.70	6,524	6,378	5,974	6,232	5,838
	12 mos.	295,070	15,058	310,128	277,158	62,334	53,308	3,041	70,752	63,834	17,778	274,709	244,319	88.60	88.20	33,797	30,999	28,403	26,642	23,597
Long Island	3 mos.	4,093	100,789	104,882	96,052	21,870	19,852	826	25,122	21,209	1,862	109,004	95,340	103.93	99.25	(4,430)	503	(2,882)	(4,430)	503
	12 mos.	19,081	370,736	389,817	356,812	83,235	75,905	3,302	96,492	79,627	6,735	422,223	372,295	108.31	104.33	(33,394)	(16,451)	(27,978)	(33,394)**	(16,451)
Louisville & Nashville	3 mos.	318,333	5,903	324,236	279,040	56,529	46,431	2,186	73,598	62,009	10,757	293,057	257,484	90.40	92.30	63,564	14,398	11,769	41,673	19,270
	12 mos.	1,843,851	23,481	1,867,434	1,064,395	218,256	179,478	6,799	276,494	245,864	42,414	1,144,080	999,746	90.30	93.90	135,122	41,747	98,337	104,413	44,217
Missouri-Kansas-Texas	3 mos.	59,331	3,362	62,693	64,308	15,076	11,182	392	12,420	19,208	6,944	59,059	61,087	94.20	94.99	(776)	1,501	7,360	(3,672)	754
	12 mos.	253,510	14,741	268,251	220,917	54,126	36,528	1,124	67,540	65,239	9,633	248,748	210,521	92.72	95.29	7,769	3,588	26,694	7,675	3,351
Missouri Pacific	3 mos.	450,286	13,154	463,440	457,565	84,086	73,636	2,521	112,366	107,188	16,298	416,804	402,553	89.93	87.97	42,689	49,731	41,233	34,855	33,574
	12 mos.	1,834,704	52,956	1,887,660	1,830,496	314,331	253,395	9,875	428,461	385,588	62,759	1,660,169	1,479,904	87.94	87.54	206,906	179,725	178,502	148,323	123,308
Norfolk & Western	3 mos.	472,577	19,617	492,194	419,184	72,216	54,250	3,513	83,500	73,698	14,109	353,107	302,463	71.74	72.15	159,911	131,837	74,529	93,524	61,443
	12 mos.	1,719,259	67,648	1,785,907	1,559,534	291,967	245,073	13,892	292,266	284,902	55,382	1,341,925	1,214,913	75.13	77.90	502,967	362,817	239,256	291,062	232,416
Pittsburgh & Lake Erie	3 mos.	17,547	1,650	19,197	22,155	3,461	3,612	45	3,505	732	276	18,116	15,941	94.36	71.95	1,581	4,504	586	1,080	4,890
	12 mos.	76,929	5,712	82,641	83,536	13,986	13,436	147	11,822	6,070	1,020	72,647	64,150	87.90	76.79	27,010	8,076	3,168	21,795	7,368
St. Louis Southwestern	3 mos.	98,778	1,466	100,244	84,850	12,967	12,143	463	19,554	16,329	5,220	83,578	70,504	83.37	83.09	59,425	12,068	(1,623)	41,136	10,932
	12 mos.	382,858	6,017	388,875	303,859	62,561	48,407	1,990	72,116	53,870	23,638	335,578	266,356	86.29	87.65	90,024	30,901	24,274	61,001	24,933
Seaboard Coast Line	3 mos.	310,379	9,736	320,115	320,259	57,881	50,255	2,258	82,030	78,412	9,891	310,197	297,113	96.90	92.77	89,497	48,327	(35,917)	43,552	49,850
	12 mos.	1,279,673	39,387	1,319,060	1,220,131	235,129	195,874	9,061	316,600	287,047	38,821	1,234,917	1,111,386	93.62	91.08	249,201	182,220	32,812	197,425	175,369
Soo Line	3 mos.	83,429	1,599	85,028	83,702	16,427	17,543	402	15,031	15,258	2,020	70,309	68,349	82.70	81.70	15,467	15,429	-	10,980	10,041
	12 mos.	323,752	5,907	329,659	314,265	73,895	64,396	1,538	59,057	58,956	8,165	278,714	264,004	84.50	84.00	55,193	50,214	33,026	36,398	34,045
Southern	3 mos.	440,764	10,004	450,768	429,608	73,146	77,076	5,074	86,157	76,718	20,516	371,380	354,248	82.38	82.45	82,198	63,870	50,579	52,105	44,130
	12 mos.	1,751,074	39,595	1,790,669	1,637,712	282,003	282,032	18,622	333,839	294,805	80,068	1,451,200	1,345,526	81.04	82.15	330,876	263,896	226,002	212,080	180,918
Southern Pacific	3 mos.	531,739	16,458	548,197	531,585	74,571	71,952	4,720	148,735	128,783	21,685	548,900	506,013	100.12	95.16	35,215	41,455	14,013	21,905	60,669
	12 mos.	2,196,310	66,510	2,262,820	2,050,049	339,563	268,533	19,459	584,658	523,425	86,455	2,246,115	2,003,043	99.26	97.70	51,303	54,957	12,830	47,843	72,612
Union Pacific	3 mos.	495,049	7,092	502,141	534,434	77,345	87,645	3,114	102,867	105,021	24,433	441,246	464,083	87.87	86.83	51,807	58,585	17,136	37,980	40,666
	12 mos.	2,070,520	30,273	2,100,793	2,003,052	329,545	316,163	12,152	407,305	385,847	97,838	1,808,443	1,731,709	86.08	86.45	245,591	222,283	214,407	167,368	164,738
Western Maryland	3 mos.	26,165	666	26,831	24,173	4,646	5,768	196	2,429	4,714	1,580	18,057	24,069	87.29	99.85	9,728	(934)	4,217	5,166	307
	12 mos.	89,754	3,388	93,142	92,752	21,971	21,564	777	10,164	14,046	6,381	75,843	84,183	81.42	90.76	18,660	8,337	9,190	10,520	6,525
Western Pacific	3 mos.	44,099	637	44,736	48,828	6,391	6,602	103	9,124	10,770	1,813	44,859	46,705	100.27	95.65	3,394	3,402	(3,285)	231	2,876
	12 mos.	185,939	2,313	188,250	185,013	30,066	24,477	366	42,750	42,565	6,921	193,917	181,094	103.01	97.88	13,966	7,066	(10,380)	9,132	5,858

* Includes subsidies

** Includes real estate sales

*** Excludes approximately $70 million possible surcharge refund and related currently pending appeal.

ADVERTISING SALES

William J. Cavenagh, Director

New York, NY 10014
345 Hudson Street (212) 620-7200
W. Arthur Cubbage, Regional Sales Mgr.

Chicago, IL 60602
29 E. Madison St. (312) 641-5815
Robert D. Bartley, Regional Mgr.
Glen A. Schlueter
Regional Sales Mgr.

Pittsburgh, PA 15237
1005 McKnight Park Dr., McKnight East
(412) 366-0702
Ronald M. Giallonardo

Atlanta, GA 30328
P.O. Box 28412
(404) 252-6510
Roger Kelton

Houston, TX 77079
Hawley-Lindenberger & Assoc.
11777 Katy Freeway Suite 155
(713) 870-0470
Robert Hawley
Gary Lindenberger

Dallas, TX 75225
P.O. Box 25045 Preston Station
(214) 361-6182
Joseph Sanders

Santa Monica, CA 90403
2665 30th St., Suite 102
(213) 450-9134
Fred Klaner, Jr.
Edward Klaner

Sausalito, CA 94965
3030 Bridgeway Building
(415) 332-6750
Chris Vogler

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Tokyo, Japan
C.H. Yiu, Managing Director Sales
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Telephone: 453-7361
Cable: SUNGAINSHIA, TOKYO

Market

CARLOADINGS

Loadings of revenue freight in the week ended March 6 totaled 397,894 cars, according to the Association of American Railroads. This was a decrease of 59,345 cars, or 13.0%, compared with the corresponding week last year. Ton-miles generated by carloadings in the week ended March 6 are estimated at 17.0 billion, a decrease of 11.8% below the corresponding week of 1981.

REVENUE FREIGHT CARLOADINGS

Commodity	Mar. 6 week	Feb. 27 week	Feb. 20 week
Grain	27,934	29,663	27,757
Other farm products	4,603	5,379	4,611
Metallic ores	17,904	21,656	19,862
Coal	124,773	125,174	119,559
Crushed stone, gravel & sand	8,858	8,803	8,204
Nonmetallic minerals	10,859	9,520	11,453
Grain mill products	13,368	14,138	13,618
Food & kindred products	14,212	15,277	14,414
Primary forest products	16,983	18,039	16,489
Lumber & wood products (except furniture)	5,812	6,391	5,493
Pulp, paper & allied products	17,796	18,240	17,377
Chemicals & allied products	25,726	25,776	23,497
Petroleum products	4,562	4,905	5,112
Stone, clay & glass products	10,146	10,273	9,649
Coke	5,309	5,489	5,016
Metals & products	11,690	13,252	10,540
Motor vehicles & equipment	14,470	14,696	14,138
Waste & scrap materials	9,370	9,762	9,224
Forwarder & shipper assn. traffic	9,863	10,327	9,040
All other carloads	43,460	45,175	41,571
LCL traffic	196	208	175
Total Cars Loaded	**397,894**	**412,144**	**386,799**
Cumulative total	1982		1981
10 weeks	**3,654,470**		**4,255,628**
Estimated revenue ton-miles (billions), 10 weeks	**158.2**		**178.8**

PIGGYBACK LOADINGS

U.S. piggyback loadings for the week ended Feb. 27 totaled 37,947 cars (8.1% above the corresponding 1981 week) and 64,781 trailers or containers (up 1.6% from 1981). Cumulative volume for the first nine weeks of 1982 is 297,742 (up 7.6% from 1981) and 529,669 trailers or containers (up 5.8% from 1981).

CANADIAN CARLOADINGS

Canadian railway revenue freight loaded in the seven-day period ended Feb. 21 totaled 4.6 million tons (down 8.1% from 1981). Cars loaded totaled 66,275 (down 10.5% from 1981). Cumulative loadings for 1982 were up to 29.9 million tons (down 11.7 from 1981).

● *Illinois Central Gulf.*—Has budgeted $26.6 million for rebuilding 600 open-top hopper cars at its Centralia, Ill. shop. Work will start in third-quarter 1982 and be completed by year's end.

● *Massachusetts Bay Transportation Authority.*—Has selected the Portec Sidewinder Direct Fixation System for use in a slab track application, more than 3.4 miles long, in the Red Line extension tunnel connecting Harvard Square with the Alewife area in Cambridge. Installation is scheduled to begin in July.

● *Locomotive ownership and condition.*—Class I roads owned or leased 27,670 diesel-electric units on Jan. 1, a decrease of 552 units from Jan. 1, 1981, according to AAR yearly summary.

	Owned or Leased Jan. 1		Stored Serviceable Jan. 1		Waiting Shops Jan. 1	
	1982	1981	1982	1981	1982	1981
Diesel-electric (units)	27,670	28,222	3,765	1,637	1,901	1,694
Steam (locomotives)	1	1	1	1	–	–
Electric (units)	0	79	–	–	–	–
Total	**27,671***	**28,302****	**3,766**	**1,638**	**1,901**	**1,694**

* Includes 116 slug units
**Includes 77 slug units

● *Freight cars and locomotives.*—The following report has been received from the AAR and the ARCI:

DELIVERED

	January 1982	January 1981	December 1981
Built new by carbuilders	1,833	5,064	2,455
Built new in RR shops	162	272	256
Built new—total	1,995	5,336	2,711
Rebuilt	110	35	47
TOTAL DELIVERED	**2,105**	**5,371**	**2,758**
Locomotives (new and rebuilt)	14	29	101

ORDERED

To be built new by carbuilders	835	2,147	1,811
To be built new in RR shops	0	0	0
To be built new—total	835	2,147	1,811
To be rebuilt	0	300	900
TOTAL ORDERED	**835**	**2,447**	**2,711**

ON ORDER AND UNDELIVERED

	February 1 1982	February 1 1981	January 1 1982
To be built new by carbuilders	13,231	44,219	14,819
To be built new in RR shops	1,504	4,232	1,666
To be built new—total	14,735	48,451	16,485
To be rebuilt	790	265	900
TOTAL ON ORDER	**15,525***	**48,716**	**17,385**
Locomotives (new and rebuilt)	234	524	214

*Due to revisions and cancellations of some orders, the Feb. 1, 1982, backlog has been reduced by 590 cars.